

Serial No.09/726,325  
HP Docket No: 10003484-1

### REMARKS

This communication is in response to the Office Action dated May 23, 2003. Claims 1-3, 5-13 and 15-23 are pending in the present Application. Claims 1-23 have been rejected. Claims 1-3, 5-13 and 15-23 remain pending in the present Application.

The present invention includes an electronic pen that records motion data relating to the use of the pen. It includes a pen body and a ball mounted in the pen body. A sensor in the pen body, located proximate the ball, detects motion of the ball and converts the motion into corresponding electronic signals. A memory in the pen body, electronically coupled to the sensor, receives the electronic signals and stores corresponding data related to the motion.

### § 103 Claim Rejections

For ease of review, Applicant reproduces independent claims 1 and 11 herein below:

1. An electronic pen for recording motion data relating to use of the pen, comprising:
  - a pen body;
  - a ball mounted in the pen body;
  - a sensor in the pen body, located proximate the ball, for detecting motion of the ball and converting the motion into corresponding electronic signals;
  - a memory in the pen body, electronically coupled to the sensor, for receiving the electronic signals and storing corresponding data related to the

Serial No.09/726,325  
HP Docket No: 10003484-1

motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball; and

a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding electronic signal from the sensor to the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled.

11. A method for recording motion data relating to use of a pen having a body, a ball mounted in the pen body, a memory, and a sensor located proximate the ball, comprising:

detecting motion of the ball using the sensor; sampling the sensor at a particular rate using a circuit electronically coupled to the sensor and the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled;

converting the motion into corresponding electronic signals;

receiving the electronic signals;

controlling transmission of the electronic signals from the sensor to the memory using the circuit; and

storing in the memory, based upon the electronic signals, corresponding data related to the motion, the data including data points related to positions of the ball and enabling extrapolation to generate lines representing the motion of the ball.

The Examiner states:

Claims 1-20 are rejected under 35 U.S.C. 103(a), as being unpatentable over O'Donnel, Jr. (6486875 B1) in view of Schiller et al. (2002/00312243) and Stevenson et al (2002/0054026 A1).

Applicant respectfully disagrees with the Examiner's rejection. The present invention includes an electronic pen that records motion data relating to the use of the pen. It includes a pen body and a ball mounted in the pen body. A

Serial No.09/726,325  
HP Docket No: 10003484-1

sensor in the pen body, located proximate the ball, detects motion of the ball and converts the motion into corresponding electronic signals. A memory in the pen body, electronically coupled to the sensor, receives the electronic signals and stores corresponding data related to the motion. Additionally, the invention provides for a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding electronic signal from the sensor to the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled.

The Examiner asserts that O'Donnell, Jr. teaches of an electronic pen similar to that of the present invention. O'Donnell Jr. is directed to a writing instrument that also functions as a computer peripheral. The writing instrument has the general configuration of a ball-point pen. The pen includes a ball for ink writing that is operatively associated with internal sensors that precisely detect the distance and direction of ball movement and relay that directional and distance data to a microprocessor which records a series of vectors similar to a computer mouse. The pen also includes interchangeable memory cartridge for the storage of the data and a wireless computer connect, for example infrared, that can communicate generated or stored data to an associated computer. The pen also includes an external LED data display, a speaker/microphone and an ink reservoir.

The Examiner asserts that O'Donnell, Jr. is silent regarding the limitation of "a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate and controlling transmission of the corresponding

Serial No.09/726,325  
HP Docket No: 10003484-1

electronic signal from the sensor to the memory, the circuit including a timer for determining the particular rate at which the sensor is sampled" as recited in the independent claims of the present invention. The Examiner then asserts that Schiller et al. teaches the above referenced recited limitation at page 4 paragraph 62 and that the present invention is obvious in view of the O'Donnell and Schiller et al. combination of references. Applicant respectfully disagrees.

When making an obvious rejection under 35 U.S.C. § 103, a necessary condition is that the reference or combination of the cited references *must teach or suggest all claim limitations*. (Emphasis added.) If the cited reference(s) do not teach or suggest every element of the claimed invention, then the cited reference(s) fail to render obvious the claimed invention, i.e. the claimed invention is distinguishable over the combination of the cited reference(s). Applicant accordingly disagrees with the Examiner's obvious rejection.

The asserted portion of Schiller et al. reads as follows:

The successive coordinates for handwriting on a page are captured in successive frames and stored together. A timestamp is inserted in the beginning of the page and each time the pen is lifted from the paper. The system detects when the pen is lifted or again contacts the paper by detecting the presence or absence of the pen in successive frames. The timestamp can be kept in either a full format or an incremental format as shown in FIGS. 3 and 4. In either case the most significant bit distinguishes the time stamp word from a vector word. When a new page is started, a full timestamp is inserted before the first valid pixel word. Subsequent timestamps are incremental. An incremental timestamp stores only the number of frames since the last full timestamp. The frame frequency is a settable parameter.

Applicant asserts that Schiller et al. merely discloses the implementation of a timestamping mechanism, for use in conjunction with an electronic pen, that can record when the pen is lifted from or makes contact with the paper. Claims 1

Serial No.09/726,325  
HP Docket No: 10003484-1

and 11 recite the implementation of a circuit, electronically coupled to the sensor and the memory for sampling the sensor at a particular rate *and controlling transmission of the corresponding electronic signal from the sensor to the memory*, the circuit including a timer for determining the particular rate at which the sensor is sampled. (Emphasis added.) Applicant accordingly asserts that Schiller et al. does not teach or suggest the limitation of "*controlling transmission of the corresponding electronic signal from the sensor to the memory*" as recited in claims 1 and 11 of the present invention.

In addition, the Examiner asserts that Stevenson et al. teaches recorded handwritten data synchronized to audio for transmission of both audio and data to a computer, paragraphs 39 and 44, including different sample rates, paragraph 54 and that it would have been obvious to the skilled artisan at the time of the invention to combine the O'Donnell, Jr. reference with either the Schiller et al. reference or the Stevenson et al. reference to arrive at the invention of claims 1 and 11. Applicant respectfully disagrees.

The asserted portion(s) of Stevenson et al. reads as follows:

[0039] "Electronic writing data" as the term is used herein refers to data recorded by a device capable of recording writing made on a writing surface. Several examples of such devices have recently been developed that are capable of recording such writing. MIMIO.TM. manufactured by Virtual Ink and EBEAM.TM. manufactured by Electronics For Imaging are examples of devices adapted to use ultrasound to track dry eraser pen strokes on white boards, flip charts and other writing surfaces. Other examples of devices that have recently been developed to record writing data include, but are not limited to WACOM.TM. tablets, CROSS.TM. tablets, and other similar electronic writing devices. It is noted that the present invention is independent of the source of the electronic writing data and thus may be used in conjunction with any device which produces said electronic writing data.

[0044] A time stamping method is used in order to synchronize the electronic writing data and audio data prior to the combined data being streamed

Serial No.09/726,325  
HP Docket No: 10003484-1

and displayed. A common time source is used as a reference to time stamp the writing and audio data as the computer receives it. As soon as the electronic writing data or audio data arrives from the recording device, it is time stamped using the audio sample rate time calculation (See Equation 1) as its synchronization time source. If video is present, it may also use the audio time source for synchronization.

[0054] When the information is re-assembled by the viewing software, it is important to end up with the exact stroke objects that were assembled by the recording device. This is very different from the way standard video compression works, where once compressed the integrity of the ink data would be lost. Reassembly of information is done by dividing the writing data into stroke data comprising data-points covering a short duration, preferably less than 5,000 ms, preferably less than 2,500 ms, more preferably less than 1,000 ms, and most preferably less than 500 ms. At a sample rate of 1 data point per 10 ms, 1000 ms corresponds to 100 data points. As groups of data are combined and defined as stroke data, the resulting stroke data is time stamped, associated with a particular identification number, and sub identification number, converted into a binary format appropriate for streaming, and transmitted to a streaming server, file archive, or both.

Similar to the Schiller et al. reference, the Applicant asserts that Stevenson et al. merely discloses the implementation of a timestamping mechanism for use in conjunction with an electronic pen that can record when information is transmitted. Applicant accordingly asserts that Stevenson et al. does not teach or suggest the limitation of "*controlling transmission of the corresponding electronic signal from the sensor to the memory*" as recited in claims 1 and 11 of the present invention.

Consequently, since neither Schiller et al. nor Stevenson et al. teach or suggest the limitation of "*controlling transmission of the corresponding electronic signal from the sensor to the memory*" as recited in claims 1 and 11 of the present invention, the Examiner's proposed combinations of O'Donnell Jr. in view of Schiller et al. and O'Donnell Jr. in view of Stevenson et al. neither teach

Serial No.09/726,325  
HP Docket No: 10003484-1

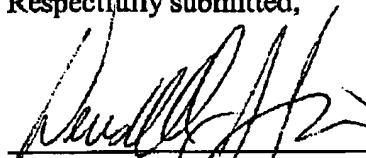
or suggest each and every limitation of independent claims 1 and 11. Claims 1 and 11 are accordingly allowable over the Examiner's obviousness rejection.

Claims 2, 3 and 5-10 and 12, 13 and 15-23

Since claims 2, 3 and 5-10 and 12, 13 and 15-23 are respectively dependent on claims 1 and 11, the above-articulated arguments with regard to claims 1 and 11 apply with equal force to 2, 3 and 5-10 and 12, 13 and 15-23. Accordingly, claims 2, 3 and 5-10 and 12, 13 and 15-23 should be allowed over the Examiner's cited reference.

Applicant believes that this application is in condition for allowance. Accordingly, Applicant respectfully requests reconsideration, allowance and passage to issue of the claims as now presented. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,



Wendell J. Jones  
Attorney for Applicant  
Reg. No. 45,961  
(408) 938-0980

RECEIVED  
CENTRAL FAX CENTER  
SEP 24 2003

OFFICIAL